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SOCIETY OF ARTS.

FRIDAY, MARCH 25th, 1853.

Memorial of the Council of the Society for the Encouragement of Arts, Manufactures, and Commerce, to the Lords Commissioners of Her Majesty's Treasury,

Sheweth,

That your Memorialists hear with great satisfaction that Her Majesty's Government have under their consideration the question of introducing into this country a system of decimal coins, weights, and measures, which your Memorialists view as a most important step in advancing the Arts, Manufactures, and Commerce of the country, to the promotion of which the efforts of your Memorialists are directed.

Your Memorialists consider that it is a question not only of national importance, but extends to the future mutual relations of all countries in the world, and they therefore beg leave to submit the following views, which have been advanced in this Society, as well worthy the attention of Her Majesty s Government.

The progress of science and commerce is gradually rendering different nations more and more necessary to one another, and the growing education and intelligence of the people are every day sweeping away the feelings of personal antipathy which formerly existed between nations at a time when very few years ever passed without their being engaged in hostilities.

The Exhibition of 1851 was a striking example of the extent of the sentiments of goodwill among different nations which that event called forth. The variety of the produce of their industry shown together in London must have proved to the most unthinking that the very differences of race, character, or genius which may exist among nations are only means appointed by Providence to render them dependent upon one another for supplying most of their outward wants.

That Exhibition having sprung from this Society, has induced many of its members to direct their attention to an improved system of international relations, and they would desire to use every opportunity of drawing attention to the numerous benefits which may yet accrue to the whole world, by facilitating personal and commercial intercourse between various nations.

It has been suggested that uniformity in coins, weights, and measures, would be of the greatest importance in this respect to commerce; and in the case of weights and measures, would at the same time greatly facilitate scientific research.

As, therefore, the Government must necessarily be engaged in researches as to the best means of accomplishing the change to a decimal system of coins, weights, and measures, it is respectfully submitted to them, that it may be of use to inquire whether, by arrangement with neighbouring nations, some steps may not be taken which may tend eventually to an adoption of an uniform system throughout the world.

It is very probable that such a measure will be sooner or later called for so loudly by different nations, as to force it upon the attention of their respective governments; and it is possible that the Government of this country might be forced into a second change not a great many years after that now contemplated. It is therefore well worth their consideration, whether the inconvenience of one of these changes might not be avoided by a little judicious foresight.

Even were such attempts found unsuccessful in the present state of the world, it is submitted that it would be a glorious act on the part of England making the first advances,—worthy of the nation which inaugurated unrestricted commerce, unrestricted navigation, and which invites by its Exhibitions, and by its policy, the most unrestricted competition, and therefore cooperation among the people of the whole world.

It is further submitted, that there is nothing impossible in realising such an idea. Several nations on the continent of Europe have already the same coinage, and the metrical system of weights and measures is still more widely adopted, and this with the greatest advantage and convenience to the inhabitants of the several countries.

It is not desired to press any particular standard upon the attention of the Government, who have all the intelligence of the country at their command; but it is considered that the views above expressed have not yet been brought forward with the prominence they deserve, and your Memorialists have therefore taken leave to submit them to your Lordships.

Signed for, and on behalf of, the Council of the Society of Arts,

Edward Solly,
Secretary.

March 23rd, 1853.

SPECIAL PRIZE.

It is desired to call attention to the fact, that the Essays on the History and Management of Literary, Scientific, and Mechanics' Institutions, —and especially how far, and in what manner, they may be developed and combined, so as to promote the moral well-being and industry of the country,—for which the Council has offered two premiums, the Society's Medal and *50l.* for the best, and *25l.* for the second best,—must be delivered at the Society's House, on or before the 31st of March next.

It should be observed, that this restriction applies to all the subjects enumerated in the Society's Premium List, with the exception of articles of Colonial produce.

It should be known that the Society, in all cases, expressly reserves the power of rewarding each communication in proportion to its merit, or even of withholding the premium altogether. In every case, however, Candidates may be assured that their claims will be judged with the utmost liberality.

FRENCH EXHIBITION OF ALL NATIONS.

The following decrees were made at the Palace of the Tuileries on the 8th inst.:

"Act 1. A Universal Exposition of Agricultural and Industrial Products will be opened at Paris, in the Palace of Industry, Square Marigny, on the 1st of May, 1855, and will be closed on the 30th of September following. The products of all nations will be admitted to that Exposition.

"Act. 2. The Quinquennial Exposition which, in terms of Act 5 of the Ordonnance of the 4th of October, 1833, ought to open on the 1st of May, 1854, will be united with the Universal Exposition.

"Act 3. A further decree will determine the conditions upon which the Universal Exposition will be made, the regulation under which the goods will be placed, and the different kinds of produce capable of being admitted."

DUTIES ON PAPER, NEWS, ETC.

Mr. Milner Gibson has given notice of a motion for the 14th of April, relative to the duties on news, advertisements, and paper. Literary and Scientific Institutions, and Mechanics' Institutes desiring the repeal of these taxes, may, with advantage, avail themselves of this opportunity for conveying to the Legislature their sentiments on the subject. A form of Petition which has been adopted by some Institutions is annexed. One name at least should be on the same sheet as the words of the Petition itself.

FORM OF PETITION.

To the Honourable the Commons of the United Kingdom of Great Britain and Ireland, in Parliament assembled.

The humble Petition of the several persons whose names are hereunto subscribed,

Showeth,

That your petitioners are members of a society established at , under the title of , which has a library and reading-room that are much frequented.

That all taxes which impede the diffusion of knowledge are injurious to the best interests of the public.

That the tax upon newspapers, called the stamp, the excise duty upon paper, and the tax upon advertisements, are direct obstacles to the spread of all kinds of valuable information amongst the great body of the people.

Your petitioners therefore pray that the excise tax upon paper, the tax upon advertisements, and the stamp tax upon newspapers, may be abolished, leaving the proper authorities to fix a small charge for the transmission of newspapers by the post.

And your petitioners will ever pray.

The following letter on the same subject has been received by the Council:

Dublin Statistical Society, 40, Trinity College,
Dublin, 11th March, 1853.

Sir,—I am directed by the Council of the Dublin Statistical Society to acknowledge the receipt of your communication of the 8th instant, respecting the Duties on Paper, Advertisements, and News; and to state in reply, that the Statistical Society has no news-room, and consequently the Council have no replies to make to your special queries.

The Council, however, desire me to express their conviction of the injurious effects arising from the Duties on Paper and Advertisements, and their desire for the immediate and complete repeal of these taxes.

The tax on foreign books they consider still more objectionable; the amount of revenue produced by it is insignificant; it operates therefore as an artificial impediment, wantonly imposed on the dissemination of the productions of foreign writers and thinkers; thus impeding the progress of knowledge amongst mankind, and retarding the development and acquaintance with, and respect for, the thoughts and feelings of foreigners, which form the best securities for peace, and for uninterrupted advancement in civilization.

With respect to the effect of the Excise regulations on the development of the manufacture of paper, there is a point which has, no doubt, been brought under the notice of the Society of Arts; but which is so illustrative of the effects of Excise regulations on manufactures, that it is worth repeating.

The Council have been informed by a paper manufacturer, that the paper in the moist state in which it leaves the paper machine, is suited for being immediately used (without being cut or taken off the machine), for making room-paper, or for printing books; and that, were it not for the Excise regulations, these manufactures could in many cases be combined, so that the rags would be put in at one end of the machine, and room-paper, or the printed sheets of a book brought out at the other.

The Excise regulations, by prohibiting the manufactures from being combined, compel the paper to be cut, dried, examined for taxation, carried to another manufactory, and moistened and placed in a similar position to that in which it was before the interference.

W. Neilson Hancock, *Secretary.*

COLONIAL POSTAGE.

Her Majesty's Postmaster-General having said, in reply to a Deputation from this Association, on the 4th March, that it was the intention of Government to reduce the rate of Postage on Colonial letters to *Sixpence* per half ounce; of which sum one Penny was stated as being intended to cover the expenses at home, one Penny those in the Colony, and *Fourpence* those of Ocean transit,

It was Resolved at a Meeting of the Council of the Postage Association, held on Tuesday, the 15th March, 1853,—

That this Association is gratified with the declaration of the Postmaster-General, as far as regards *uniformity* of Colonial Postage, but considers that the *rate* proposed does not meet the objects of the Association, which cannot relax its efforts to obtain a very much lower rate of charge than that proposed, and thus to secure for the Colonies and Dependencies the same advantages of intercommunication that have been obtained for the Mother-country.

The Association considers, that the proposed charge of Fourpence for the Ocean transit of letters, whether effected by vessels subsidised by Government or by private ships, is entirely inconsistent with the principles upon which the uniform rate of the Penny-postage was established; it having been satisfactorily proved that distance was not the element upon which the rate of postage should be computed.

That the proposed charge of Fourpence per half-ounce is at the enormous rate of 59*l.* 14*s.* 8*d.* per cwt., or

1,194*l*. 13*s*. 4*d*. per ton, and can only be viewed as a serious tax on the intercourse between the Colonies and the Mother-country.

That the real cost of the freight upon a letter transmitted to our Colonies, even if estimated at the highest rate of freightage, is absolutely insignificant, and ought, when such important political, social, and moral objects are involved, to be disregarded, as it is in the case of Ireland, the Channel Islands and other places.

That the proposed charge would not put an end to the extensive evasions which are now practised.

That while the proposal of Government risks half the amount of the present gross revenue from Colonial letters, it does not hold out the same prospect of the loss being compensated by a large increase in the number of letters, as, judging from experience, might be relied upon, if a much lower rate were at once adopted.

That the proposed charge on Colonial letters is at variance with the suggestion made by Mr. Rowland Hill, in 1838, that the charge on Colonial and Foreign letters should be at the rate of 2*d*. the single letter.

The Association regrets that so high a rate should have been proposed for the British Colonies, at the moment when Government is negotiating with foreign countries for large mutual reductions of postage.

And, lastly, the Association believes, that had the experiment of Penny-postage at home been tried in a partial manner, such as is now proposed with regard to Colonial postage, it would have proved a failure instead of becoming, as it has, one of the most extraordinary blessings that was ever conferred by Government upon a country.

PHOTOGRAPHY.

The following process, it is understood, has been adopted in France for keeping the collodion plates sensitive for many hours. Two pieces of plate glass, of equal size, are taken, and on one the collodion film is spread in the usual way; it is then dipped in the nitrate of silver bath, and when the streakiness has disappeared it is lifted vertically from the bath, leaving the lower edge just immersed in the fluid. The second piece of glass is then applied to the collodion film, beginning at the lower edge. A thin stratum of the solution, by capillary attraction, becomes enclosed between the two glasses, which are then placed in the slider; and it is said that thus prepared, they may be kept sensitive a whole day, before exposing them to the action of the camera. On the operator's return home, the glasses are easily separated by the introduction, at one corner, of a thin ivory or bone paper-knife, without any injury to the collodion film, and the image is then developed in the usual way. If any of the readers of the Journal should try this plan, it is very desirable that they should give the Society the benefit of their experience by sending an account of their success or failure.

HOME CORRESPONDENCE.

PHOTOGRAPHY.

Sir,—I see by the reply of Mr. Reveley, in your Sixteenth number, to my letter inserted in the Thirteenth, that, if I have not to deal with a practical photographer, I have opened an interesting discussion with a gentleman of great scientific abilities, well versed in questions referring to the principles of optics, whose opinions must be met with sound and serious reasoning, and who, from his temperate style, appears to have no other aim than progress in truth and science, and more particularly the improvement of the art of Photography. Such being the feeling, I am sure that he will like to know how far a practical photographer finds that his theories can be supported by experiment.

For this reason, and also for the benefit of those of your readers who are interested in these questions, I beg to be allowed to reply to Mr. Reveley's last letter.

It is perfectly understood that in Photography the rays operating are only those which are situated at the most refrangible part of the spectrum, from the blue rays to invisible rays extending beyond the violet rays, the greater action being between the lines G and H of the spectrum; that the red, orange, yellow, and green rays have no sensible photogenic action, except some curious influence which I have treated of in a paper published in the Philosophical Transactions of the Royal Society for 1847.

If the whole spectrum had a photogenic action, it would be more difficult to correct perfectly the chromatic aberration, not only on account of the great length of the dispersion, but also on account of the irregularity of that dispersion.

If we measure the whole spectrum we find that the rays which contribute to a visual image occupy about one-half of its length, and the chromatic aberration of these rays, according to Mr. Reveley's own observation, is sufficiently corrected by first-rate opticians. But I hope to prove that the aberration of the actinic rays constituting the other half of the spectrum may be corrected by the same means.

If, by the combination of two prisms of different dispersive powers, it is possible, by the angle given to both, to refract to the same point the red and green rays, it is also possible, by increasing the angle of the most dispersive medium, or reducing the angle of the less dispersive, to increase the amount of its chromatic correction, so that the violet ray may be brought to the same point as the red ray, and even beyond it. But such a proportion between the refractive angles might be an impediment to the correction of the spherical aberration, and fortunately it is not necessary to employ such a means. The correction of the dispersion of the most refrangible part of the spectrum, which only contributes to the formation of the photogenic image, can be effected with a smaller difference between the angles of the two glasses which is more favourable for the correction of the spherical aberration. Provided the violet ray is brought to the point where the blue ray is falling on the axis of the foci, this is all that is required for the production of a correct photogenic image; of course, there may be a certain aberration of the yellow, orange, and red rays, but this does not affect the photogenic image.

The same proportion between the angles of the two prisms may produce a sufficient correction for the aberration of the visual rays, but there will be on the visual focus a certain aberration of the blue, indigo, and violet rays, and of the actinic rays occupying the same part of the spectrum. This aberration of invisible rays, or at least, of rays contributing so little to the formation of the visual image, will not affect in a sensible degree the correctness of the visual image.

We may have, therefore, on two different planes, two correct images; on one plane a correct visual image, on another plane a correct photogenic image. In taking care to place the ground glass on the plane giving a correct visual image, and the photographic tablet on the plane giving a correct photogenic image, we have all that is required in photography from the use of a camera obscura.

I have indicated the means of easily finding the photogenic focus by comparing on the focimeter the difference between the visual and the photogenic focus; and photographers have no difficulty when the object-glasses have a photogenic focus not coinciding with the visual focus, which is always more or less the case in the best constructed glasses. But first-rate opticians have the power to render this difference very small for a certain distance of the camera from the object, and so small that the two foci may be said to coincide. I say for *one* distance, because it is impossible to have the two foci coinciding for all distances. But I have discovered that by some atmospheric influences the achromatism of object-glasses is constantly varying, so that for one distance the two foci may coincide in certain circumstances and differ in others.

This phenomenon I have constantly met with for more than ten years, and although the fact is received by some persons with incredulity, the more I experiment, the more proofs I have of its truth, which I trust will very soon receive some explanation from the late splendid discovery of Professor Stokes, placing beyond doubt the change of refrangibility of the various rays. In fact, when we consider that light is constantly varying in its constituent proportions, according to the vapours of the atmosphere,—that the density of the atmosphere is always undergoing changes,—how can we doubt that the refraction and dispersion of that medium does not always bear the same ratio with the refraction and dispersion of the glass, which has been the base of the calculation of the optician in establishing the curves of the glasses?

Mr. Reveley may be assured that there is no more difficulty in correcting the actinic aberration than in correcting the chromatic aberration, and the inspection of photographic pictures, such as I could show him, produced even by the whole aperture of lenses, will convince him that the problem has been solved. He must not judge from the pictures produced in the infancy of the art, or with bad instruments, which are more numerous than perfect ones.

At all events, the idea of employing deep blue glass for neutralizing the aberration of the luminous rays, cannot affect the aberration of the actinic rays. "*The copying of an engraving through a blue glass was a case perfectly in point*," for the object was to stop the red, orange, yellow, and green rays, and prevent their action on the tablet, and I mentioned this experiment as the most easy to perform. A long time ago I tried many other experiments, which I might have mentioned, being quite analogous, but not so simple, and for that reason unnecessary in a short reply.

One of these experiments, nearly the same as recommended by Mr. Reveley, I have just repeated before a friend, and has given the result I expected. It is as follows:

Having placed in the camera obscura against the frame receiving the plate a piece of blue glass covering only one half of the plate, I found on the photographic tablet, that the part of the image covered by the blue glass was considerably darker than the half not covered. But as it might be supposed that the glass itself had by reflection thrown away a certain amount of the actinic rays, I repeated the experiment, covering the other half with a piece of white glass of the same thickness, leaving between the two a sufficient space not covered at all by either piece of glass, in order to have at the same time the effect of the blue glass—of the white glass—and of no glass at all. The result was as conclusive as the first,—the part of the image covered with the white glass was apparently as light as the space not covered, and the part covered with the blue glass as dark as before. Therefore, the blue glass does more harm by its absorption of actinic rays than it does good by the absorption of neutralizing rays.

When I replied to the first suggestion of Mr. Reveley, it was not as a man who was actuated by any spirit of contradiction, but as one who from a conviction acquired by a long series of experiments, and who from the knowledge of his art has some ground to form a judgment, and to oppose those unfounded prejudices (which are so difficult to remove when they are so often repeated) against the most perfect and beautiful process by which man has ever been able to obtain the representation of all that can be seen, as true in shape and proportion as the images on our retinæ, and deficient only in colours.

Because people have seen, in the infancy of the art, and see even now from the productions of unskilful operators supplied with imperfect instruments, evident defects in Photographic pictures, they cannot imagine that these defects have been and are every day avoided. In fact, I may assure Mr. Reveley, and all those who share his prejudices, that Photography in its present state performed by experienced operators, and with such object-glasses as those which are manufactured by first-rate opticians, has attained the highest state of perfection which all lovers of the marvellous and beautiful could ever have imagined in their dreams of progress. The stereoscope has been the last and not the least addition to the wonders which art and science united could perform for the true representation of natural objects.

Mr. Reveley, in recommending the use of blue glass for lenses, imagines that by this means "views of buildings and of monuments of great architectural beauty might acquire the proper artistic gradation of middle tints, from the highest light to the deepest shade," and he adds, "that he cannot understand why excluding light rays, which confessedly do no good, but which might possibly do great harm, can be any disadvantage." But I can assure him on this point that blue glass is a decided disadvantage; it is, indeed, the medium known which allows the actinic rays to pass in the greatest quantity, but it does not increase them when they do not exist,—and even the blue glass absorbs a certain amount of actinic rays. We have not yet discovered a really actinic medium through which the whole of the actinic rays are only admitted to the entire exclusion of all the other rays; if we ever discover it (and it might be the result of Professor Stokes' new investigation), we shall try it, and probably find some advantage in its use, for, from my own experiments, I have the conviction that a medium which would absorb none of the actinic rays, as does the blue glass, but would exclude the red, orange, and yellow rays, which are antagonistic to the actinic action, would be a great discovery in the art of Photography.

Is Mr. Reveley aware that, at the commencement of Photography, we operated in blue glass-rooms; and that we have been obliged, in order to operate quicker, to replace the blue by white glass?

I cannot conclude without speaking in the most impressive manner regarding the last suggestion of Mr. Reveley, when that suggestion, which in practice would be no advantage on account of the loss of light, which would be the consequence of magnifying the picture, leads him to state that "the features nearer the Camera are represented larger in proportion to those more distant; and that unless some change be made, Photography will never become, in common phrase, pleasing likenesses."

This is a most decided error, and a most unfounded reproach against Photography. There is no change to be made in Photography in this respect; the remedy to the imagined evil is known and very simple, and it is that which all good operators have the means to employ; viz., to take their portraits with a camera obscura, which has a sufficiently long focus to enable the operator to place the apparatus at such a distance from the person, that the perspective on the Photographic picture will be equal to the perspective that a good portrait-painter will give to the various parts of his subject, and which he must give in order to be correct; in other words, equal to the perspective we have on our retinæ. Surely it is not necessary or desirable to represent objects with less perspective than that with which we see them naturally?

I must not omit the suggestion of "constructing a camera, of such a size that a photographer could place himself inside with stool and shelf, upon which he might perform the whole of the manipulations." But what manipulation Mr. Reveley does not say,—and I do not see any which can be performed while the light is operating. In the Daguerreotype process it is not necessary to prepare the plate on the iodine or bromine in the camera obscura; and the effect of mercury would not be a very wholesome one for an operator placed in his camera obscura. These operations can be made with more advantage, and better, in separate apartments. In the Talbotype some operations may be advantageously performed immediately, particularly in the collodion process; and I understand that Mr. Archer has contrived a camera with which he can perform on the spot all the necessary operations, without enclosing himself in the apparatus; and where the tablet must be placed at eight, ten, or fifteen inches from the object-glass the space is rather contracted for a good-sized operator.

I have not the honour of knowing Mr. Reveley personally, but having had the advantage of discussing with him some points of my profession for the sake of truth and science, this circumstance I hope may induce him to favour me with a visit at my establishment, where I shall be most happy to remove all his doubts respecting the deficiencies of the art of Photography.

I am, Sir, your obedient Servant,

A. Claudet.

107, Regent-street,
17th March, 1853.

MEASUREMENT FOR TONNAGE.

Sir,—I most cordially agree with the sentiment expressed in the letter of your Correspondent, H. M., inserted in your Journal (No. xvi., page 190,) "that this subject should not be hastily dropped." But I must beg to differ from H. M. as to the mode of carrying out any improved measure. It is not by abstruse or intricate calculations that the capacity of a vessel should be ascertained; they are at best approximations only to the truth, and are not at all suited to that class of persons whose duty it is to measure for legal tonnage. Besides, in order to ensure something like accuracy, the formula must vary with every description of build; for it would be absurd to suppose that a heavy merchantman could be measured by the same formula as a clipper yacht or a crack steamer.

It is not the internal capacity of the hull that is required; it is the actual weight necessary to sink it from light to load-water line, or its equivalent, the weight of sea water displaced by that portion of the hull comprised between the two water lines. Now the specific gravity of sea water being known, if we could ascertain the exact cubical contents (outside measure) of the hull, the true tonnage would also be known; and herein consists the great difficulty, because the curves upon which the hull is formed are not mathematical lines, but arcs of circles, variously united by means of elastic rulers, and are not therefore reducible to any form of algebraical equation.

It is to the ship-builder that we must apply, who, having every dimension accurately laid down on paper to scale, and in the loft real size, could be required by an Act of Parliament to furnish a legal document under his hand, to be attached to, or embodied in the ship's register, expressing the exact cubical contents of all that portion of the hull which is wet with water between the two water lines.

It would, however, be a much simpler plan to obtain the real weight from the Customs department, which always knows to a pound what a vessel carries; due regard being had to the proper position of the two water lines, and the difference between the specific gravity of salt and fresh water, as the case may be.

There may possibly be other means of obtaining the facts of the case with strict accuracy; all I contend for is common honesty, and that when a vessel shall be sunk to her proper load-water line, she shall be known by her register to have so many tons and fractions of a ton on board. The present regulations most absurdly give tenths and hundredths of a ton, when a vessel may be able to carry double her register tonnage, or none at all.

I have often heard the observation made, that it is impossible to ascertain the true tonnage, by reason of the very different nature of the cargo a ship may carry. So far it may be said to be true, that if she were loaded with lead, or quicksilver alone without dunnage, she could not carry her full weight, because her masts would soon go by the board. Neither could she carry her full weight of wool alone, though stowed with screwjacks, for want of room for so light a material. All this, however, is the business of the merchant and shipowner, not of the Government,—which, when it descends to contemptible details between man and man, or buyer and seller, opens the door to every species of fraud, peculation, and immorality. The *ad valorem* duty on foreign silk, for example, excites an interest in the agent to underswear, and the Customs officer to overswear the value of the goods; and then, perhaps, after a lengthened dispute, during which the turn of the market may be lost, the two may agree to go shares in a sham seizure and forced sale, whereby the revenue, the merchant, and persons even remotely connected with the transaction may be, and are frequently defrauded to an enormous extent.

Indeed, the Government, while it continues to levy duties and taxes by means of oaths instead of by measure, weight, and number, may be said to be the great aider and abetter of the crime of perjury throughout the length and the breadth of the land.

Why should not silk or anything else pay so much duty per ton, good, bad, or indifferent, and let the shippers and consignees settle the matter of quality among themselves?

The universal application of this principle of discriminating denominations, and disregarding quality in the Customs department, would prevent in a great measure the flooding of our markets with low-priced foreign goods, and would in some degree be a protection to our own native industry.

Henry W. Reveley.

Parkstone, March 19th, 1853.

DECIMAL CURRENCY.

City, 22nd March, 1853.

Sir,—In making the change from our present system of notation to the decimal, I think it is of the utmost importance that we should strictly preserve the decimal, and not intermix the centesimal with it. To introduce two modes of progression would tend to complicate the matter without giving any compensating advantage. In effecting the change, I think it is most desirable that the names of familiar coins should be retained as much as possible, and that it would be less inconvenient to the mass of the people to have the coins which are most used by them, slightly altered in value, than to have new coins and new names circulating with old ones. By making the Pound contain 1,000 of the present Farthings the decimal system would be accomplished. All mercantile establishments would instantly alter their systems of book-keeping to a Pound, and its decimals, without waiting for any new coinage. The silver divisions of a Pound would of course represent their proportion of Farthings: — the Florin 100 Farthings; the Shilling 50 Farthings; the silver Sixpence 25 Farthings. But I would still have only 4 Farthings in the Penny, and 2 in the Halfpenny as usual—although, of course, their relative value to the Pound also would be slightly altered; namely, there would be 250 pence in a Pound, 25 in a Florin, 12½ in a Shilling, &c., the alteration being only four per cent. on the coppers, which could affect no one injuriously, and not at all for more than the first day of the change. Let us suppose a person getting 8*s*. 9*d*. per week—for it is the poor I feel interested about—the rich and informed can take care of themselves; and on the Saturday he receives his 8*s*. 9*d*., on which day the change has taken place—he receives 8*s*. 6*d*. in silver and the 3*d*. in copper. On changing his silver 6*d*. he gets six Pennies and one Farthing, so he is no worse off; but the small dealer, the chandlers' shopkeeper, how does he manage? He would find when he sold articles for coppers that it would be necessary to increase the nominal price a little, namely, four per cent., to enable him to realize as much as he did before.

Of course it would be desirable that we should have coins representing 10 Farthings, otherwise the poor would not so readily avail themselves of the decimal system; but still the change for all business purposes could be effected without new coins. I do not know if an Act of Parliament would be required to alter the relative values of the copper coins or tokens to the Pound; if so, or not so, I trust the present Government will not allow this year to pass without inaugurating a system demanded by all persons engaged in mercantile pursuits. Yours, &c.,

Decimal.

March 15th, 1853.

Sir,—As a prospective Decimal Currency is engaging the public attention, will you permit me to follow up the valuable remarks which have appeared in the Journal of the Society of Arts, with a few practical suggestions?

The objects proposed are, to reduce our present system of computation to a more simple form, interfering in the least possible degree with long-established usages, and the accustomed operations of mental arithmetic; to retain, as far as may be practicable, familiar names, and to render service to the science of foreign exchanges.

The first question which presents itself is this: Shall the Pound or the Florin be the unit of value? The reply seems instinctively to be, the Pound: an attempt to reduce the integer would offer too rude a shock to public opinion. From this idea, two propositions have resulted; the first, to retain the present form in our books of account, substituting Florins for Shillings, and Cents for Pence and Farthings—thus, £1 9f. 99c.=1*l*. 19*s*. 11¾*d*.; the second, to introduce four terms, or designations—the Pound, Decines, Centines, and Millines, the last arising from the necessity for a coin of smaller denomination than the Centine of a Pound, which is equivalent to 2⅖*d*. But, regarding the subject practically, it does appear that our system offers a singular facility for the adoption of a more simple method. Imagine the line of separation between the Pound and the Florin evanescent, and the difficulty vanishes; precisely the same figures occupy precisely the same position, 19 Florins=1*l*. 9 florins. No mental process is required; it is intuitively perceived that, although the Florin is the unit, each figure in excess will represent Pounds, and the statement of value will assume the simple form 19,99.

Another question immediately arises—How will the change affect the transactions of daily life in their minuter forms?—How shall the transition be regulated and explained, so as to present no formidable obstacle to the least susceptible mind? The sum of 1*l*. 19*s*. 11¾*d*. is to be represented by 19,99. The first part of the process is sufficiently obvious:—Divide the number of shillings by 2, the quotient will represent Florins—thus: 18÷2=9; therefore, 1*l*. 18*s*.=19 Florins. The chief difficulty therefore ranges within the limits of the Florin and the Centine. To aid in the solution of the problem, the accompanying Table[*] has been prepared in which every fractional value is indicated; thus provided, the operation of the new system may be traced. The price of some article of merchandise is demanded; the reply may be 11 Cents, or 35 Cents. This answer at first may convey no definite idea of its value, and the mind at once reverts to the former method of computation as a standard. How is the desired result to be attained?—a very simple mental process will suffice for the purpose. 100 Centines being equivalent to 96 Farthings, the number of Cents in small amounts divided by 4 will indicate the exact value in Pence and Farthings, and as the amount increases there will be a gradually increasing difference in the proportion 100 : 96 or 25 : 24—thus, Cents, 11÷4=2¾; whereas, in 35 Cents similarly divided, the Table indicates a slight difference. However, the respective values of the Sixpence, the Shilling, and combination of both—namely 25, 50, 75, the recognition of which would soon become natural—would prove cardinal points in assisting and correcting the calculation.

To return, then, to the original number, 99:

99÷4=24.75
100 : 96 : : 24·75 : 23¾=1*s*. 11¾*d*.
Thus: 1*l*. 18*s*.=19 Florins,
1*s*. 11¾*d*.=,99 Centines.
£1 19*s*. 11¾*d*.=19,99.

The next subject for consideration is the value and the designation of the smaller coins; and with reference to this point, the proposition of Professor Jack seems to be especially valuable. For the convenience of exchange, it is expedient that each integer and decimal should be represented in the current coin. If this be granted, an appropriate designation must be sought; and is not the designation for a new coin suggested by the decimal division which marks the ten-cent piece as the true denarius? which, in the term penny, has found in our language a form of expression, and which may with peculiar propriety be adopted, although the coin to which it is attached may be altered in value; the penny at present in circulation being associated in our ideas with the quadruple of a farthing to be termed a four-cent piece. Should this idea be approved, it may perhaps be advisable to introduce at the first some distinguishing word, as the new or silver penny; custom would soon apply it correctly.

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[*] In this Table is given the number of farthings and cents —exact and approximate—in the scale from one farthing upwards to a florin, increasing by farthings, but it is considered unnecessary to publish it.

The penny (denarius), if issued as a substitute for the fourpenny and threepenny pieces, would remove a great perplexity in commercial transactions.

It would also suggest a significant term by which to designate the sixpence,—a name no longer appropriate, being equal in value with 25 cents., or 2½ of the new coin,—it may be termed a sestertius, or sesterce, the similarity in sound facilitating the adoption of the term.

With the addition of a coin of 5 centines, the system would stand thus:

Sovereign	=	1,000 Cents
Half-sovereign . . .	=	500 „
Five-shilling Piece . .	=	250 „
Half-crown	=	125 „
Florin	=	100 „
Shilling	=	50 „
Sesterce	=	25 „
Penny	=	10 „
Five-cent Piece . . .	=	5 „
Four „	=	4 „
Two „	=	2 „
Cent	=	1 Cent

Having been for several years connected with the commercial world, I trust that it will not be thought that I am venturing beyond the limits of my legitimate sphere in submitting these remarks for consideration.

I am, Sir,
Yours very truly,
H.

VENTILATION OF WORKSHOPS.

Sir,—I am rather surprised that the simple process of downward ventilation has not been applied to remove the poisonous exhalations in the dipping and drying workshops of the lucifer match manufactories. The expense to the large manufacturers would be trifling, if even anything, considering that wages would be certainly less for a healthy employment than for an injurious one, let alone the consideration of suffering humanity.

The mode of application would be to lay down a second floor over the first, leaving a clear space of about eight or ten inches, the original floor being made as air-tight as it conveniently could. The false floor, if of wood, should be made of grating, similar to the gratings on board ship; if of metal, perforated plate; and if of brick, of the perforated malt kiln floor tiles. The work tables or counters should also be of grating, with loose boards, and barely large enough for the work to be done upon them.

In order to induce the downward current in the atmosphere of the workshops, two methods may be followed. The simplest, perhaps, would be to set up a furnace and high chimney shaft at some distance from the building, with a culvert connecting the space between the two floors with the ashpit of the furnace. Another convenient mode, where a steam-engine is employed, would be to cause it to drive any kind of blowing-machine, as a blowing-fan, &c., that would act in the reverse way as an exhauster.

The introduction of fresh air must of course be from the ceiling; but in order to prevent the unpleasant effects of a downward draft upon the heads of the work-people, a false ceiling of light frames covered with strained calico, should be suspended about five or six inches below the ordinary ceiling, and which should not reach the four walls of the room by three or four inches. Should the air introduced require to be warmed, a hot steam or water-pipe placed all round the room, close under the aperture, would effect that end.

I make this suggestion, because there appears to be a disinclination on the part of the manufacturers to introduce the amorphous phosphorus, which again when used on a large scale, might possibly cause some other unforeseen disease. The system of downward ventilation is the only means of rendering the atmosphere of dirty workshops and crowded assemblies sweet and wholesome. The adoption of the contrary, or the upward current of warm or cool air, has been the secret cause of the failure of Dr. Reid to warm or ventilate the House of Commons, to the satisfaction of any one Member of the House. The passage of air through the perforated floor of a room, must inevitably carry with it all the dust, dirt, and effluvia from boots and shoes, and in workshops from uncleanly vestments, vocations, and personal habits, right up to the faces and nostrils of the persons assembled therein.

Henry W. Reveley.

Parkstone, March 22, 1853.

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

Royal Scottish Society of Arts.—At a meeting of this Society, held in their Hall, 51, George-street, on Monday, 28th February, 1853, David Stevenson, Esq., F.R.S.E., President, in the chair, the following communications were made:—1. On the Initial Velocity of Shot,—Range at different Velocities,—Eccentric Shot. By George Lees, LL.D. Dr. Lees, after giving a short exposition of the parabolic theory of gunnery, proceeded to give on account of Mr. Benjamin Robin's experiments on the initial velocities of balls, by means of the ballistic pendulum. He then compared the actual range at different velocities, and showed how little was gained in range by a great increase of velocity. He then referred to eccentric shot, observing that the range had been increased by this means to the extent of from 500 to 600 yards; and remarked that these effects were so very striking, as to be well worthy of the attention of the artillerist. There was no doubt that artillery was our right arm, and everything tending to improve it was eminently worthy of attention. 2. Description of a new process of Stereotype Moulds; with notices of the history and results of the process of Stereotyping. By Daniel Wilson, LL.D., F.S.A. Scot., V.P. Dr. Daniel Wilson, in exhibiting this new method, stated that it was calculated to facilitate the process, and to introduce it into more general use, by diminishing the cost. In introducing the subject, he reverted to the curious fact —by no means singular in the progress of inventions— that, in the economic adaptation of printing to its fullest extent by means of stereotype plates, we are returning to a state of things nearly similar to the "Block Books," as they are called, which, in the beginning of the fifteenth century, preceded the great discovery of moveable types, and by means of which the first essays in printing were made by Guttenburg, Faust, and Mentz. The discovery of stereotyping, or the process of taking casts from forms of moveable types, was made by William Ged, a goldsmith of Edinburgh, about the year

1725; though imperfect attempts had been previously made to attain the same important end by Van der Mey, of Leyden, by soldering together the forms of ordinary moveable types for a quarto Bible, so early as 1711. He then detailed the various efforts at further improvement on this process, including those of Brunel, Allan, Sinclair, &c.; after which he described and exhibited the new process introduced by him to the notice of the Society, which consists in taking the casts of the types, not in gypsum or stucco, but in blotting-paper, overlaid with a thin layer of whiting, starch, and flour-paste, covered with a sheet of tissue-paper, and impressed on the types by means of beating it with a fine brush. It is then dried on a hot steam-chest, while still adhering to the types; and by this means a matrix is produced, and the types are again ready for distribution to the compositors within one hour. The advantages of the new process are—1st, The greater certainty of the process; the new matrix not being liable to warp or break, as the stucco is. 2nd, The greater rapidity; the process being completed in one hour by it, which could not be done in less than six by the other. 3rd, The practicability of using the matrix in certain cases for casting several plates, whereas the stucco mould is always destroyed in a single casting. And 4th, The much greater simplicity of the apparatus required, which added to the economy of time, and the consequent diminution of the quantity of type required for the compositors, give the important economic results which form the great merit of the new plan.

Mr. Dixon Vallance, Greenshields, exhibited in action a working model of his Condensed Water-pressure Wheel, by which he endeavoured to show its superiority to the Overshot Water-wheel, the water being applied to it in both ways.

INSTITUTION OF CIVIL ENGINEERS, March 1, 1853.—J. M. Rendel, Esq., President, in the Chair. The paper read was "On the Increased Strength of Cast-Iron, produced by the use of Improved Coke;" by Mr. W. Fairbairn, M. Inst. C.E. The paper commenced with a communication from Mr. Crace Calvert, on the subject of an improved system of depriving the fuel, whether used in blast furnaces or in remelting cupolas, of the deleterious substances by which the quality of the iron was deteriorated; or of the adaptation of the system to blast furnaces, when using coal for smelting iron ores. The object was chiefly to point out, what were believed to be, the causes of the inferiority of iron, in many works, apart from the varying qualities of the ores. These were stated to be the introduction and application of the hot blast, which had enabled the ironmaster to reduce into cast and malleable iron a very large per centage of cinders, slag, and other impurities, containing large proportions of silicate of iron, sulphur, and phosphorus, all of which tended to destroy the tenacity of the metal, and to render it either "red short" or "cold short;" and also, when sufficient attention was not devoted, by those who were entrusted with the regulation and charging of the blast furnaces, to the chemical composition of the ironstone, by which the relative proportions of the flux and fuel employed in its reduction, should be regulated; the chemical composition of the limestone, or the coal not being sufficiently known; these materials often varying in quality as much as the ironstone itself; and the iron smelter was unable to tell, with certainty, the quality of iron which his furnace would produce. Instances had occurred where a siliceous ore had been used for three or four hours successively, and then at once it had been replaced by an aluminous and sometimes by a calcareous ironstone, without the change being made in the proportions of limestone or coal, which was evidently required by the different qualities of those ores. The injurious action which an impure fuel had upon the quality of the iron was particularly alluded to; and the necessity of removing the sulphur from the coal or coke, when employed in the blast furnaces, before it could be imparted to the cast-iron during the process of smelting, was strongly enforced. Mr. Crace Calvert had introduced the following simple process. If the blast furnace was worked entirely with coal, chloride of sodium was added with each charge in proportion to the quality of the ore and flux employed; but a better result was produced if the coal was previously converted into coke, and an excess of the chloride was used in its preparation in order to act on the sulphur of the coal and of the ore, should any be found therein; and a greater improvement was manifested in the quality of the iron when only coke so prepared was used in the blast furnace. The coke so purified emitted no sulphurous fumes when taken out of the coke oven, nor when extinguished with water did it give off the unpleasant odour of sulphuretted hydrogen; nor was there any sulphurous acid gas liberated during the operation of smelting iron in the cupola, or in raising steam in the locomotive boiler by coke so prepared; and it was stated that these decided advantages were gained in some cases at an additional cost of only one penny per ton of fuel.

The second part of the Paper gave the results of a series of experiments which had been made by Mr. Fairbairn, upon trial bars one inch square, cast from iron melted in the cupola, with coke prepared by the process of Mr. Crace Calvert. Specimens were exhibited of the iron so prepared, when the closeness of texture and the absence of the "honey-comb" appearance prevailing in the iron cast with the ordinary coke was clearly demonstrated. The mode of experimenting was described, and the results were given very elaborately, and it was shown that the average increase of strength was from ten to twenty per cent. Taking the mean of the whole experiments the following conclusions were arrived at:

	lbs.
The mean breaking weight of the bars per square inch melted with the improved coke, was	515·5
Ditto ditto with ordinary coke .	427·0
	= 88·5

in favour of the castings produced from the improved coke, or in the ratio of 5 to 4. The experiments on the bars smelted with the improved coke indicated iron of a high order as to strength, and might be considered equal to the strongest cold blast iron; the metal appeared to have run exceedingly close, and exhibited a compact granulated structure, with a light gray colour.

ROYAL GEOGRAPHICAL SOCIETY, March 14.—The President, Sir Roderick I. Murchison, in the chair. The paper read was "On the Great Isthmus of Central America," by Captain Robert Fitz-Roy, R.N., F.R.S., F.R.G.S.; illustrated by Mr. Arrowsmith and others. After some introductory and general remarks, Captain Fitz-Roy took a brief view of seven lines of proposed inter-oceanic communication. He then mentioned the novel and important information recently received from Mr. Gisborne and Dr. Cullen, and he showed that whatever preference might have been given formerly, in 1850, to the Atrato and Cupica line for a shorter communication, there is no argument that can be adduced in favour of that line that does not apply with far greater effect to the line proposed between the Gulf of San Miguel and the almost classical locality formerly named by Paterson (who founded the Scotch colony on the Isthmus and the Bank of England) Caledonian Harbour. Captain Fitz-Roy then examined the geographical details of that part of the Isthmus, gave a sketch of the present state of our knowledge of the vicinity, and a brief outline of its history. He then entered into considerations of the nature and feasibility of a canal of such a gigantic scale as is contemplated by Sir Charles Fox, Messrs. Henderson, Brassy, Cullen, and Gisborne. He alluded to the labour attainable, to the possibility of employing convicts, and to the prudence of establishing military organisation to a certain extent, for the sake of order, and, possibly, defensive measures. He then referred to the two great impediments to such an undertaking, the native aborigines and the climate; and he showed by what means those obstacles might be greatly lessened. Mr. Gisborne's opinions of the size and nature of such a canal were detailed, and Captain Fitz-Roy advanced others, somewhat at variance with them. The claims of other Companies, to certain legal doubts that should be solved were referred to, and also the general character and objects of an enterprise so important that (when a survey shall have fully proved the whole case) Government will doubtless assist the undertaking, and all maritime nations will eagerly unite in guaranteeing its absolute neutrality.

PROCEEDINGS OF INSTITUTIONS.

Bakewell.—A Lecture on the subject of "Italy" was delivered before the members of the Bakewell and High Peak Institute, on Tuesday evening last, by the Rev. J. B. Jebb, of Walton Lodge, near Chesterfield. The lecture was the result of personal observations during a tour made in that country a year or two ago, and was replete with anecdote; while in historical, political, and religious points of view, it was well worthy of the attention which it received. The illustrations of scenery and costume were exceedingly good, while the maps and charts enabled the audience to transport themselves at once to the particular localities described.

Barnet.—On the 23rd of February last, a concert of sacred music was given in the Town Hall, on behalf of the Building Fund of the Barnet Institute; the principal singers being Mrs. J. Roe, Mrs. W. Dixon, and Messrs. J. and G. Brooks. The programme was selected from the works of Handel, Mozart, Mendelssohn, &c.

Brighton.—A Lecture on the "Electric Telegraph" was delivered to the members of the Mechanics' Institution, at the Town Hall, by Mr. John Banks, Secretary to the Hastings Mechanics' Institution. The lecturer commenced by giving a brief description of telegraphic communications, including the ancient beacon, referred to in the *Agamemnon* of Æschylus, the pitch-pot beacon of the ancient Britons, and that of the Saxons, Chappe's, and the shutter telegraphs, the Admiralty semaphore and ship signals. He next alluded to the electric telegraph, giving a description of the method of working it, in which he was assisted by several well-executed diagrams and experiments. A vote of thanks was unanimously awarded to the lecturer. The Second Annual Soirée of the Mechanics' Institution took place at the Assembly-rooms, in the Town Hall, on Monday evening, February 28th. At half-past eight o'clock the chair was taken by J. C. Burrows, Esq., Vice-president. The Chairman stated, that the Society was in a flourishing condition, comprising at present 355 members, and that the classes were well attended; that the library contained 1,800 volumes, which circulated among the members to a very large extent He also referred to the benefits that had accrued to the Institution through the union effected with the Society of Arts, and stated that the reading-rooms had been well attended during the past year. Subsequently, P. O'Brien, Esq., delivered an address upon "the Objects of Mechanics' Institutions." H. Stein Turrell, Esq., and Major Fawcett, afterwards addressed the meeting, which was numerously attended, there being upwards of 800 persons present.

Bury.—The first of a short course of four Lectures on different subjects, by various gentlemen in the town, was recently delivered to the members and friends of the Athenæum, by the Rev. E. J. Hornby, rector, on the "Early History of England." The Rev. Lecturer commenced by giving an account of that portion of our history immediately preceding the invasion of the Romans, and then went on to notice the different races of people who made incursions into this country. He gave a general account of the various rulers of the kingdom down to the death of Harold, noticing in his course the first introduction of Christianity into Britain. The Second Lecture of the Course was delivered on Thursday evening last, by Mr. B. Glover, "On the Pursuit of Knowledge, its Duties, and Advantages;" in which the lecturer earnestly advocated the study of biography, as a means of creating emulation in the minds of his hearers, and instancing remarkable examples of men who have raised themselves by means of their own exertions and perseverance in the objects of their pursuits.

Cheltenham.—The Annual Meeting of the members of the Literary and Philosophical Institution was held on Tuesday the 8th instant, the President, W. M. Tartt, Esq., in the chair. In reference to their Union with the Society of Arts, the Report stated that in return for the subscription several works of value and interest had been received; and the chief object of this connection—the obtaining first-class lecturers at a moderate amount of remuneration—would, it was hoped, be made available during the ensuing session. A league, or union, with others societies of a like nature to their own, in the neighbouring districts, had been found impracticable; and it was to be regretted that this had been attributable, in several instances, to difficulties occasioned by diminished support. Under these circumstances it was gratifying to know that the Cheltenham Institution still maintained a position of usefulness and activity. Its financial condition was improving, the amount in arrear being only 29*l.* 2*s.* 10*d.*, while this time last year it was 45*l.* 7*s.* 5*d.* Thanks for his past services were voted to the President; who, in resigning his office, expressed his regret that he was no longer able to devote to it the time and attention which he felt that it both required and deserved. The Rev. Morton Brown, LL.D., was appointed as his successor. E. R. Humphreys, LL.D. (Head Master of the Cheltenham Grammar-school), as one of the Vice-presidents; and the Rev. H. W. Bellairs, District Government Inspector of Schools, as one of the Council.

Crewkerne.—On Thursday, March 3rd, the Fourth Anniversary of the Literary and Scientific Institution was held in the Town Hall; the Rev. Dr. Penny in the chair. The Report stated that during the past year upwards of 800 volumes had been circulated; the lectures were well attended, and the number of members had increased. The financial statement showed a balance of 4*l.* in favour of the Institution. Mr. Sparks, the Rev. J. Polehampton, Mr. Pendered, and other gentlemen addressed the meeting, recommending among other things the formation of classes, which it is hoped will shortly be carried into effect. The following gentlemen were elected to serve on the Committee: Messrs. W. Sparks, G. S. Joliiffe, F. Wills, G. Pulman, J. Pendered, J. Wheadon, Rev. J. M'Dowall, S. Heowe, and J. Light; Treasurer, Mr. W. Y. Standfield; Honorary Secretary, Mr. J. Pearce; Librarian, Mr. S. Turner.

Dawlish.—The Third Annual Report of the Literary and General Knowledge Society, states that the number of members is 119, of which 9 are honorary. During the year, 105 books have been added to the library, which now comprises 610 volumes. The financial statement shows an expenditure of 45*l*. 3*s*. 10*d*. against 55*l*. 2*s*. 1*d*.; leaving 9*l*. 18*s*. 3*d*. in the hands of the Treasurer.

Plymouth.—On Wednesday last Mrs. C. L. Balfour, of London, delivered an interesting Lecture to the members of the Mechanics' Institute, on the "Female Characters of Shakspere." Her exemplifications of character and illustrative quotations were listened to with great gratification by a large and attentive audience. On Friday evening, Mr. C. F. Barnard, of Plymouth, gave a Lecture on the "Adulterations of Food." The subject was treated with great skill, and the illustrations and chemical tests described in a masterly manner.

Royston.—On Tuesday and Wednesday evenings, the 1st and 2nd instant, two Lectures on "Arctic Expeditions," especially those sent in search of Sir John Franklin, were delivered before the members of the Mechanics' Institute, by C. R. Weld, Esq., Assistant-secretary of the Royal Society. The lecturer gave an interesting sketch of early arctic maritime enterprise, relating the discoveries of Cortereal, Gomez, Cabot, Thorne, Willoughby, Frobisher, Cook, Parry, Franklin, Back, and Ross. He then spoke of the equipment of Sir John Franklin's expedition, concerning which so much anxiety is felt by thousands in all parts of the civilized world. He gave many particulars of the various expeditions sent in search of Franklin by England and America—related the last information received of Sir Edward Belcher's expedition, and concluded by delivering his opinion on the prospects of the search.

Southampton.—On Wednesday evening the Rev. G. Waterman, from the United States, delivered a Lecture to the members and friends of the Polytechnic Institution, "on America; its People, Institutions, Government, and Laws, especially in reference to Negro Slavery." The lecturer, after referring to the different classes by whom the various sections of the Union had been originally settled, stated that even at the present time the distinctive characteristics of the primitive founders of the various states were still to be traced in their descendants, and that consequently the social and political institutions of the various states differed materially from each other. In considering the question of slavery, which he condemned in the strongest possible terms, he showed the difficulty of dealing with it, in consequence of its being one over which the Federal Government had no control, except in the territories and in the district of Columbia; the power to deal with it being reserved to the state governments.

Wandsworth.—On Tuesday, the 8th and 15th inst., two Lectures were delivered to the members of the Literary and Scientific Institution, by Mr. Deane F. Walker, on the "Original Eidouranion, or Large Transparent Orrery." The lectures were well attended, and were illustrated by an apparatus constructed by his father, Mr. Adam Walker.

Yarmouth.—The Committee of the Young Mens' Institution are busily engaged with the necessary preliminaries for holding a conversazione on the 31st of March. The projected entertainment, besides comprising exhibitions of art, &c., will consist of musical performances, vocal and instrumental, short scientific lectures, readings, &c.

TO CORRESPONDENTS.

Notice.—Members, and others, who can furnish or obtain original information or suggestions on the subjects included in the Society's Premium list, or other topics connected with the Society's various departments of operation, are invited to communicate the same to the Secretary, in as condensed a form as possible, for the purpose of being either read and discussed at the evening meetings, or inserted in the Society's weekly Journal. Anonymous letters cannot be attended to. All communications, whether the author's name is to appear or not, must be accompanied by the writer's name and address.

Members of the Society who do not receive the Journal regularly, are requested to give immediate notice to the Secretary; and, in order to prevent mistakes, they are particularly requested to signify any change which they desire to have made in their address, with as little delay as possible.

QUESTIONS FROM CORRESPONDENTS.

Press for the Blind.—Can any of your readers furnish me with the present address of Mr. W. Hughes, the inventor of the Press for the Blind, for which a Prize Medal was awarded at the Great Exhibition? T. P. [No. 50.]

Writing Ink.—What are the objections to the use of essential oils, which it is said prevent fluids becoming mouldy, in the production of black writing inks? [No. 51.]

ANSWERS TO CORRESPONDENTS.

Birdlime.—In answer to your correspondent (No. 45), the following is the process adopted in the preparation of artificial birdlime:—The inner bark of the holly, gathered in June or July, is boiled in water for six or eight hours; the water is then drained off, and it is placed in a pit underground in layers with fern, and surrounded by stones; it is then left to ferment for two or three weeks, until it forms a sort of mucilage, which is pounded in a mortar into a mass; it is now to be rubbed between the hands in a stream of water until all the refuse is worked out; it is then placed in an earthen vessel, and left for four or five days to ferment and purify itself.

Should any of it adhere to the hands, it may be removed by means of a little oil of lemon bottoms or turpentine. I should also state that there is a natural birdlime which exudes spontaneously from certain plants; its colour is greenish, its flavour sour, and it is gluey, shining, and tenacious. The natural is more adhesive than the artificial birdlime. I am not aware of any extensive manufactory of birdlime in England.—C. Beard.

The Smoke Nuisance.—Your Correspondent (No. 49) seems to be in error with reference to the Smoke Nuisance. A clause (No. 112) was introduced into the City of London Sewers Act, 11 Vict. 1847 and 1848, and one in a similar Act, 14 and 15 Vict. 1851, by which it is enacted, "That from and after the first day of January 1852, every furnace employed or to be employed in the working of engines by steam, and every furnace employed or to be employed in any mill, factory, printing-house, brew-house, bake-house, &c. . . . . or other buildings used for the purpose of trade or manufacture *within the City*, although a steam-engine be not used or employed therein, shall in all cases be constructed or altered so as to consume the smoke arising from such furnace, and if any person shall after the first January 1852, use any such furnace, which shall not be constructed so as to

consume or burn its own smoke, without using to the satisfaction of the Commissioners the best practicable means for preventing or counteracting such annoyance, every person so offending shall forfeit and pay a sum of not more than 5*l.* nor less than 40*s.* for, and in respect of every day during which or any part of which such furnace or annoyance shall be so used or continued." These Acts are not general, having been introduced by the City Corporation, who could only as a body ask for an Act to apply within their own jurisdiction. As a curious circumstance connected with this subject, I may mention, that while Messrs. Calvert, brewers, being in the city, are required to use means that the smoke of their furnaces shall be consumed, within a few yards on the Thames, innumerable small steamers, and Messrs. Barclay the brewers, on the opposite bank of the river, may pour forth into the atmosphere without molestation whatever quantity of carbon they may find convenient. The Commissioners of City Sewers will immediately attend to any case your Correspondent may point out.
W.S.

PARLIAMENTARY REPORTS.

SESSIONAL PRINTED PAPERS.

Par. No. *Delivered on 16th March*, 1853.
176. Order of the Bath—Return.
198. Tithe Commission—Return.
217. Blackburn Election—Minutes of Evidence, &c.

Delivered on 17th March.

209. Kingston-upon-Hull Election—Minutes of Evidence, &c.
222. Malt—Account.

Delivered on 18th March.

220. Sandhurst College—Return.
231. Clergy Reserves (Canada)—Account of Payments out of the Consolidated Fund.
228. Bill—Sheriff Courts (Scotland), No. 2.

PATENT LAW AMENDMENT ACT, 1852.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

From Gazette, 18*th March*, 1853.

Dated 10th Feb.

353. W. E. Newton—Instruments for examining internal parts of the body.

Dated 25th Feb.

474. J. Hynam—Manufacture of wax and other tapers.

Dated 28th Feb.

497. Baron T. von Gilgenheimb—Agricultural machine.
499. T. E. Merritt—Railway carriage, &c.
501. E. H. Bentall—Improvements in harrows.
503. P. A. Fontainemoreau—Drying cigars. (A communication.
505. S. C. Lister—Heating and making cards.

Dated 1st March.

507. T. and C. Littlewood—Machinery in preparation of wool, silk, &c., to be spun.
509. J. C. Daniel—Propelling vessels and also carriages.
511. E. Charlesworth—Bill or letter-holders.
513. C. Hude—Evaporating, generating steam, heating, and production of gas.
515. R. L. Bolton—Power by explosion of gases.

Dated 2nd March.

517. C. H. Hall—Cooking by gas.
519. J. Abbott—Winding-machines.
521. J. and W. H. Smith, and A. Williams—Metallic plates, and production of ornamental patterns.
523. L. Jennings—Speed regulator.
525. R Waddell—Steam-engines.
527. W. T. Monzani—Reaping-machinery.

Dated 3rd March.

529. J. Murdoch—Manufacture of iodine. (A communication.)
531. C. Humpage—Materials for coffin furniture.
533. A. E. L. Bellford—Locomotive and other engines.
535. S. Colt—Rotating breech fire-arms. (Partly a communication.)
537. S. Colt—Machinery for forging metals. (Partly a communication.)
539. B. Chaussenot—Aërating liquids.
541. J. Wright—Machinery for manufacturing bags of paper, &c.
543. J. Waterman—Treatment of grains for production of food for cattle, &c.

Dated 4th March.

544. J. Hinks—Metallic pen.
545. R. C. Ross—Machine for cutting files, &c.
546. G. Elliott—Manures.
547. J. S. Hall—Cutting out boots and shoes.
548. W. Sandilands—Hopper for pianoforte.
549. S. H. Huntley—Regulating flow and pressure of gas.
550. H. M'Evoy—Covered buttons.
551. G. W. Bott—Pressers.
552. J. Brydell—Bedsteads.
553. J. D. M. Stirling—Manufacture of coated metal.

Dated 5th March.

554. M. A. Smith—Toys, models, and articles of ornament and utility.
555. J. Gedge—Fire-arms and loading same.
556. B. F. Weatherdon and C. Dealtry—Floating vessels and propelling.
557. T. W. Cross—Portable fire-engine.
558. W. Todd—Steam-engines.
559. J. Maudslay—Propeller.
560. R. A. Brooman—Machinery for pipes and tubes.
561. J. Hirst—Stretching fabrics.

Dated 7th March.

562. R. Barter, M.D.—Cutting roots, &c.
363. W. Barrington—Life-boats.
564. J. G. Lynde—Pressure governor for water.
565. H. Mapple—Electric Telegraphs.
566. A. Calles—Manufacture of typographic characters.
567. J. F. D. de Bussac—Paving, &c. (A communication.)
568. G. Simon and T. Humphreys—Carriages.
569. W. Matthews—Improvements in pianofortes.
570. J. J. W. Watson—Illuminating apparatus and production of light.
571. T. W. Dodds—Manufacture of iron and steel.
572. C. Parker—Weaving.
573. J. Little—Cooking apparatus.
574. T. W. Dodds—Wheels and axles.
576. T. T. Chatwin and R. M'Leish—Rollers, rods, &c., window-blinds, maps, &c.

Dated 8th March.

578. C. Finlayson — Converting reciprocating into rotatory motion.
579. T. J. Perry—Cornice-poles, picture, and curtain-rods.
580. T. Dryland—Portable iron stove.
581. J. F. Pinel—Deodorising sewage-water, &c.
582. N. Schmitt—Cleansing and separating ores and coal.
583. C. Baker—Moulds for bricks.
585. J. Wright—Bedsteads and other frames.
586. A. Samuelson—Bricks and tiles.
587. F. W. Emerson—Obtaining tin from ores.
588. J. Veevers and H. Ashworth—Preparing cotton, &c., for spinning.
589. T. Glover—Construction of buttons, &c.
590. J. Colquhoun—Bleaching silk, &c.
591. J. J. A. Macarthy—Gunnery and projectiles.

Dated 9th March.

592. J. Kimberley—Gas-stove.
594. S. Blackwell—Strap for connecting harness, &c.
598. W. Pidding—Manufacture of caoutchouc and gutta percha, and fabrics of same, &c.
600. T. J. Nash—Churns.
602. E. M. Stapley—Dressing flax, &c.
604. W. A. Holscamp—Castor for furniture.

APPLICATION WITH COMPLETE SPECIFICATION FILED.

593. J. Hogg, jun.—Machinery for cutting paper. (March 9 1853.)

WEEKLY LIST OF PATENTS SEALED.

Sealed 19th March, 1853.

12. Thomas Wood Gray, of Warkworth-terrace, Commercial-road, Limehouse—Improvements in steam-engines.
377. Martyn John Roberts, of Woodbank, Gerrard's-cross, Buckinghamshire — Improvements in galvanic batteries, and in obtaining chemical products therefrom.
435. John Goodman, of Hazel-grove, Chester—Invention of an improved fountain-pen.

508. William White, of Cheapside—Invention of an improved fabric suitable for ventilating hat-bodies.

553. Charles Frederick Bielefield, of the Strand—Improvements in billiard and bagatelle-tables.

593. Edward Samson, of Leeds, Yorkshire—Improvements in machinery for preparing to be spun hemp, flax, tow, wool, silk, cotton, and other fibrous materials.

832. John Beale, of East Greenwich, Kent—Invention of an improved arrangement of steam-engine, and an improved packing to be used therein.

1139. John Livesey, of New Lenton, Nottingham—Improvements in lace-machinery, and in piled fabrics made from such machinery.

1189. Benjamin Glorney, of Mardyke Mills, near Dublin—Improvements in obtaining and applying motive power.

38. William Edward Newton, of 66, Chancery-lane—Improvements in roving, spinning, or twisting cotton or other fibrous substances, which invention he denominates, "Larwill's Improvement." (A communication.)

39. William Edward Newton, of 66, Chancery-lane—Improvements in the construction of bearings or steps for shafts, turntables, or moveable platforms, which invention he denominates, "Parry's Improvement."

85. William Nairne, of South Inch Mill, Perth, N.B.—Improvements in reeling yarns or threads.

111. Thomas Cropper Bayley, and Edward Evans, of Haigh Foundry, near Wigan—Improvements in the construction of wrought iron wheels, to be used upon railways or for other purposes, and in the machinery or apparatus connected therewith.

Sealed 23rd March, 1853.

18. Thomas Dickason Rotch, of Furnival's-inn—Improvements in treating peat, and in manufacturing fuel and other products therefrom.

76. Christopher James Schofield, of Cornbrook, Hulme, Lancaster—Improvements in machinery or apparatus for cutting the pile of fustians, and other fabrics.

90. John Aspinall, of King William street, London—Improvements in evaporating cane-juice and other liquids, and in apparatus for that purpose.

100. William Potts, of Birmingham—Improvements in sepulchral monuments.

107. Henry Columbus Hurry, of Adam-street, Adelphi—Invention of a fountain-pen or reservoir pen-holder.

178. William Edward Newton, of 66, Chancery-lane—Improvements in stoppers for bottles, and other similar vessels.

189. Alexander Willison, of Manse of Dundonald, county Ayr—Improvements in thrashing machinery.

216. Archibald Brown, of Glasgow—Improvements in the construction of sheaves for blocks.

220. David Stephens Brown, of 2, Alexandrian-lodge, Old Kent-road—Invention of an improved apparatus or instrument for evaporating or distilling liquids.

226. Diego Jimeuze, of Percy-street—Improvements in the manufacture of soap.

252. Jacob Tilton Slade, of Pall Mall—Invention of an improved mode of driving certain machines, and an improved driving band or chain to be used therewith.

267. Thomas B. W. Gale and Jonathan Tenson, of Homerton—Improvements in the means of joining or coupling bands or straps.

280. William Bissell, of Wolverhampton—Invention of an improved cramp, or improved cramps, for cramping floors, doors, and joiners, and ship work generally.

310. William Edward Newton, of 66, Chancery-lane—Improvements in the construction of hydraulic rams.

352. Thomas Dawson, of Melton-street—Improvements in the means of cutting pile or terry fabrics.

353. Thomas Lacey, of Grafton street—Improvements in apparatus for raising liquids and in joints for uniting India-rubber, and other like flexible tubing.

361. Joseph Pimlott Oates, of Lichfield, Staffordshire—Invention of an improved spring, or improved springs, for carriages.

388. Alsop Smith, of Westminster—Improvements in the manufacture of fire-wood.

455. Auguste Edouard Loradoux Bellford, of 16, Castle-street, Holborn—Improvements in cocks or taps.

584. George Thomas Selby, of Smethwick Tube-works, Birmingham—Improvements in steam-boilers.

586. George Thomas Selby, of Smethwick Tube-works, Birmingham—Improvements in machinery for the manufacture of tubes and pipes.

610. William Edward Newton, of 66, Chancery-lane—Improvements in the manufacture of capsules or covers for bottles and other hollow articles.

612. James Dible, of Northam, Hants—Improvements in ventilating and heating ships, which improvements are also applicable to extinguishing fire on board ship.

647. John Henderson Porter, of Birmingham—Improvements in the construction of portable buildings and other structures.

686. Nelson M'Carthy, of Cork—Improvements in boots and shoes.

714. Henry Huart, of Cambrai, France—Improvements in the storing and preservation of grain.

806. William Dray, of Swan-lane, City—Improvements in machinery for crushing, bruising, and pulverising.

828. Michael Leopold Parnell, of Little Queen-street, Holborn—Improvements in the construction of box-staples and striking-plates.

884. Robert Barnard Feather, of Liverpool—Improvements in the construction of ships, and in rendering ships and boats impervious to shot.

892. Daniel Woodall, of Oldbury, Worcester—Improvements in canal-boats.

958. Alexander Laurie, of Chatham, Kent—Improvements in the manufacture of oars and other similar articles.

35. Edme Augustine Chameroy, of Paris—Invention of a new composition of different metals or metallic substances.

137. John Crabtree, of Heywood, Lancashire—Improvements in machinery for winding and doubling yarns.

146. Augustus Thomas John Bullock, Lieut. R. N.—Improvements in taps and cocks.

158. William Joseph Curtis, of 23, Birchin-lane—Invention for excavating or digging earth, and for carrying or delivering the soil.

174. David Clovis Knab, of Rue Rosini, Paris, and 4, South-street, Finsbury—Improvements in the process of and apparatus for distilling certain vegetable and mineral matters, and also animal bones and flesh.

187. Frederick Simpson, of Red-hill, Surrey—Improvements in combining materials for cleansing or whiteing stone.

189. Alfred Vincent Newton, of 66, Chancery-lane—Improvements in the manufacture of printing surfaces. (A communication.)

191. Robert William Siever, of Upper Holloway, and Robert William Waithman, of High Bentham, West Riding, Yorkshire—Improvements in bleaching animal and vegetable fibrous materials.

193. John Edward Mayall, of Regent-street—Improvements in the production of crayon effects by the Daguerrotype and Photographic processes.

200. John Henry Johnson, of 47, Lincoln's-inn-fields, and Glasgow—Improvements in the method of lubricating machines, and in the mechanism or apparatus employed therein. (A communication.)

201. James Coombe, of Belfast—Improvements in machinery for heckling or combing flax and other fibrous substances.

212. William Tranter, of Birmingham—Improvements in fire-arms.

216. George Edmond Donisthorpe and John Crofts, of Leeds—Improvements in combing wool, hair, or other fibrous materials.

217. James Pole Kingston, of 5, Lewisham-road, Kent—Improvements in combining metals for the bearings and packings of machinery.

219. John Scott Russell, of Great George-street, Westminster—Improvements in constructing ships and vessels propelled by screw or such like propeller.

223. Harold Potter, of Darwen, Lancashire—Improvements in the mode or method of producing a certain colour or colours on woven or textile fabrics and yarns, and in the machinery or apparatus connected therewith.

226. Henry Moorhouse, of Denton, Lancashire—Improvements in the mode or method of preparing cotton, wool, flax, or other fibrous material, and in the machinery or apparatus employed therein.

231. Richard Archibald Brooman, of 166, Fleet-street—Improvements in diving-bells and apparatus to be used in connection therewith. (A communication.)

234. William Watson Hewitson, of Springfield-mount, Leeds—Improvements in suspending or applying mariners' compasses in vessels built of iron or partly of iron.

240. William Edward Newton, of 66, Chancery-lane—Improvements in machinery for dressing cloth. (A communication.)

257. Israel P. Magoon, of the State of Vermont, United States of America—Invention of a new and useful improvement in steam-boiler chimneys.

272. Joshua Murgatroyd, of Heaton Norris, Lancashire—Improvements in the construction of boilers and apparatus connected therewith.

WEEKLY LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

Date of Registration.	No. in the Register.	Title.	Proprietor's Name.	Address.
March 21	3433	Inkstand	George Dowler	Birmingham.
„ 23	3434	The Sociable Carriage step and Cover	Booker and Son	Edmonton.